

**Annual Report on Affordability Findings for Compliance with the Missouri Clean Water Law
Calendar Year 2019
Prepared by Missouri Department of Natural Resources
Water Protection Program**

The General Assembly enacted Section 644.145 of the Revised Statutes of Missouri (RSMo) in 2011 to ensure that the Department of Natural Resources considers affordability when incorporating new requirements for discharges into permits for publicly owned sewer systems or water or sewer treatment works, or when enforcing provisions of Chapter 644 RSMo or the Federal Water Pollution Control Act. This report presents affordability findings for Department permits issued or anticipated during calendar year 2019. Whenever the risk of an unaffordable action is high, the Department works with permittees before issuing any final permit to mitigate changes where possible and avoid creating an unaffordable situation. These mitigation efforts can include temporary variances, revised compliance schedules, and the reevaluation of financing options.

The statutory definition of affordability with respect to payment of a utility bill is: “a measure of whether an individual customer or household with an income equal to or lower than the median household income for their community can pay the bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household, taking into consideration the criteria described in subsection 4 of this section.” Section 644.145.3(1) RSMo. See Appendix A for the subsection 4 criteria.

Number of Findings of Affordability

The Department issued 118 findings of affordability with effective dates in calendar year 2019. All 118 findings were categorized as affordable primarily because the Department established schedules of compliance to help mitigate affordability challenges. None of the changes were implemented as a federal mandate.

Findings Resulting in Higher Than Normal Median Household Income

Missouri’s statute does not establish a numeric threshold for affordability relative to median household income (MHI), although MHI is commonly regarded as an indicator of potential affordability concerns. Of the 118 actions requiring affordability findings in 2019, ten actions resulted in projected sewer rates per User greater than 2% of MHI. Of those ten actions, three were minor, resulting in monthly increases of \$0.11 or less. We categorize the remaining seven actions as affordable based on the facts and circumstances listed below:

- Permit actions for both the City of Greenfield’s Talburt and Sharpe Wastewater Treatment Facilities (WWTFs) require compliance with effluent limitations for Ammonia, new *E. coli* limitations, as well as monitoring requirements for Ammonia, Total Kjeldahl Nitrogen, Nitrate and Nitrite, and Total Phosphorus, which resulted in an estimated \$28.64 increase in the projected monthly sewer rate, or from \$40.90 to \$69.54 (per 5,000 gallons per month). The existing sewer rate was already 2.0% of the community’s MHI. The requirements would increase sewer rates to 3.251% of MHI; therefore, the Department included a 15-year schedule of compliance for the new effluent limits for Ammonia. As the Sharpe facility partially irrigates wastewater, the Department included a four-year schedule of compliance to meet the *E. coli* limitations in the

operating permit because the City anticipates being able to irrigate wastewater through the recreational season by that time. The Department will review the cost for compliance at the next 5-year permit renewal.

- Permit actions for the City of Hamilton's three associated WWTFs (Northeast, Southeast, and Southwest Municipal) require compliance with effluent limitations for Ammonia and *E. coli* as well as influent and effluent monitoring requirements for nutrients, which resulted in an estimated \$35.64 increase in the projected monthly sewer rate, or from \$35.97 to \$71.61 (per 5,000 gallons per month). The existing sewer rate is 1.117% of the community's MHI. The requirements are projected to increase the sewer rates to 2.225% of MHI; therefore, the Department established a 20-year schedule of compliance in the permit and will reevaluate it at the next permit renewal in 2022.
- Permit actions for the City of Miller require compliance with effluent limitations for Ammonia, which resulted in an estimated \$27.49 increase in the projected monthly sewer rate, or from \$36.70 to \$64.19 (per 5,000 gallons per month), thus raising the projected sewer rate to 2.10% of the MHI. This facility's previous permit was issued in 2013, and included a seven-year schedule of compliance to meet effluent limits for ammonia. Upon review of the current permit action, the Department has extended the schedule of compliance by six years.
- Permit actions for the City of Urbana include compliance with effluent limitations for Ammonia and *E. coli*, which resulted in an estimated \$17.36 increase in the projected monthly sewer rate, or from \$26.78 to \$44.14 (per 5,000 gallons per month). The existing sewer rate is 1.21% of the community's MHI. The requirements would increase sewer rates to 2.0% of MHI; therefore, the Department included a 10-year schedule of compliance to comply with effluent limits for Ammonia and *E. coli*. The Department will review the cost for compliance at the next 5-year permit renewal.

Findings Resulting in Projected Increase of Monthly Sewer Rate per User of 100% or Higher

Section 644.145 RSMo requires the Department to base permit actions and decisions pertaining to publicly owned sewer systems or water or sewer treatment works upon a finding of affordability of the costs that will be incurred and the impact of any rate changes on ratepayers. Of the 118 actions requiring affordability findings in 2019, three municipalities' requirements resulted in a projected 100% or higher increase of monthly sewer rate per User. In all three cases, the sewer rates for each of the three municipalities were less than 2% of MHI, with the highest finding resulting in a projected rate of 1.957% of MHI. For the purpose of this analysis, the Department assumed that compliance will require a system modification or replacement. Although these permit actions have been determined to be affordable based on the criteria of the statute, the Department will continue to work with each system to identify lower-cost technologies, options for consolidation or regionalization, and opportunities for grants and low-interest loans.

- The Village of Benton City must meet new effluent limits for Ammonia and *E. coli*. The Department estimates the cost to upgrade their system will increase the Monthly Sewer Rate per User by \$68.79, or from \$21.00 to \$89.79, which is a 327.57% increase that will raise the projected sewer rate to 1.96% of the community's MHI.
- The Public Water Sewer District No. 1 of Gasconade County must meet new effluent limits for Ammonia and *E. coli* as well as monitoring requirements for *E. coli* and removal efficiency

requirements for Biochemical Oxygen Demand and Total Suspended Solids. The system examined mechanical treatment and land application, with land application being a more affordable option. The Department estimates the cost for land application to meet new requirements will increase the Monthly Sewer Rates per User by \$18.45, or from \$12.28 to \$30.73, which is a 150.24% increase that will raise the projected sewer rate to 1.10% of the community's MHI.

- The City of New Cambria must meet new final effluent limits for *E. coli*. The City evaluated the cost to comply with the *E. coli* limits, along with the cost to comply with Ammonia limits, which was established in a previously issued operating permit. The City examined mechanical treatment and land application, and found that land application was the more affordable option. The Department estimates the cost for land application to meet new and existing requirements will increase the Monthly Sewer Rates per User by \$20.88 from \$20.00 to \$40.88, which is a 104.4% increase that will raise the projected sewer rate to 1.61% of the community's MHI. The schedules of compliance for *E. coli* and Ammonia were combined and extended for an additional year.

Average Increase in Sewer Rates

For the 118 findings, the projected increases in monthly sewer rates in terms of 2018 dollar values ranged from \$0.00 to \$68.79, with an average of \$5.36. The projected increases in sewer rates by percentage ranged from 0.0% to 327.57%, with an average of 18.75%.

Average Increase in Sewer Rates as Percentages of MHI

For the 118 findings, the projected increases in sewer rates, calculated as percentages of the respective communities' MHI, ranged from 0.000% to 1.499%, with an average of 0.176%. The communities included counties, cities, villages, towns, and census-designated places in which the service Users were residing.

Regionalization and Consolidation: An Increasing Choice for Pollution Control

In the Department's ongoing effort to help Missouri citizens thrive by balancing a healthy environment with a healthy economy, one of our primary goals is to promote more efficient, resilient, and sustainable wastewater infrastructure across the state. As small wastewater systems face significant challenges in providing service to their Users at a reasonable cost while complying with federal and state regulations, two options are becoming a more favorable option: regionalization and consolidation.

Regionalization refers to sharing physical infrastructure in a defined geographic area when a political or private entity provides wastewater service by physically connecting existing and future communities to a regional or central wastewater treatment facility. When multiple entities work together, each utility benefits from reduced capital and operational costs, and increased economies of scale.

Consolidation refers to the transfer of ownership and/or operational authority of an independent wastewater system to a larger system. The fundamental advantage of consolidating systems under a central provider is financial — there are simply more customers to share the burden of paying the bills. Another benefit is that small wastewater system owners are able to relinquish the burden of regulatory obligations.

Completed consolidation and regionalization projects in Missouri have already demonstrated the ability to improve services to residents, improve water quality in our rivers, streams, and lakes, and ultimately reduce costs to providers.

List of All the Permit Holders Receiving Affordability Findings

All permit holders for which the Department issued affordability findings in 2019 are provided in Table 1 along with data, including the following items required by Section 644.145.9(4) RSMo:

- a) Current and projected monthly residential sewer rates in dollars;
- b) Projected monthly residential sewer rates as a percentage of median household income; and,
- c) Percentages of households at or below the state poverty rate.

All footnotes within Table 1 are denoted by an asterisk and a number (“*1” through “*18”) and are presented at the end of Table 1.

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019

(This table is arranged in descending order of the values for the indicator “projected monthly sewer rate per User as a percentage of monthly MHI of the respective community” as presented in the column with the highlighted heading of “Projected Monthly Sewer Rate Per User: % of Monthly MHI.”)

RSMo 644.145.9 Criteria														
														Federal Mandate
														0
														Not Affordable
														0
														Affordable
														118
No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House-holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
1	MO-0055603	Greenfield Talburtt WWTF	UL	\$25,670	673	\$40.90	\$69.54	3.251%	\$28.64	70.02%	1.339%	*16	26.3%	See Page 1 of the report
2	MO-0055590	Greenfield Sharpe WWTF	UL	\$25,670	673	\$40.90	\$69.54	3.251%	\$28.64	70.02%	1.339%	*16	26.3%	See Page 1 of the report
3	MO-0040860	Weaubleau WWTF	UL	\$20,745	173	\$57.20	\$55.80	3.228%	\$0.00	0.000%	0.000%	*17	41.5%	Yes
4	MO-0084972	Hunnewell WWTF	S	\$27,852	66	\$63.40	\$63.51	2.736%	\$0.11	0.17%	0.005%	*16	31.0%	Yes
5	MO-0056260	Ava WWTP	S	\$25,596	1,328	\$51.04	\$51.07	2.394%	\$0.03	0.06%	0.001%	*16	32.3%	Yes
6	MO-0022080	Hamilton NE WWTF	UL	\$38,629	713	\$35.97	\$71.61	2.225%	\$35.64	99.08%	1.107%	*16	21.7%	See Page 2 of the report
7	MO-0022071	Hamilton SE WWTF	UL	\$38,629	713	\$35.97	\$71.61	2.225%	\$35.64	99.08%	1.107%	*16	21.7%	See Page 2 of the report
8	MO-0022063	Hamilton SW Municipal WWTF	UL	\$38,629	713	\$35.97	\$71.61	2.225%	\$35.64	99.08%	1.107%	*16	21.7%	See Page 2 of the report
9	MO-0041149	Miller WWTF	UM	\$36,622	299	\$36.70	\$64.19	2.103%	\$27.49	74.90%	0.901%	*16	13.9%	See Page 2 of the report
10	MO-0095176	Urbana WWTF	UL	\$26,456	174	\$26.78	\$44.14	2.002%	\$17.36	64.82%	0.787%	*16	32.5%	See Page 2 of the report
11	MO-0117960	Moberly WWTP	S	\$33,692	5,072	\$55.00	\$55.05	1.961%	\$0.05	0.09%	0.002%		22.7%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
12	MO-0103021	Village of Benton City Sewer System	UM	\$55,063	67	\$21.00	\$89.79	1.957%	\$68.79	327.57%	1.499%	*18	5.4%	Yes
13	MO-0057673	Hayti WWTF	UM	\$24,010	1,609	\$22.55	\$38.77	1.938%	\$16.22	71.93%	0.811%		32.0%	Yes
14	MO-0030473	Lockwood WWTF	S	\$28,720	447	\$46.25	\$46.34	1.936%	\$0.09	0.19%	0.004%		18.0%	Yes
15	MO-0113026	Spickard WWTF	UL	\$29,652	100	\$40.96	\$47.10	1.906%	\$6.14	14.990%	0.248%		42.8%	Yes
16	MO-0055280	Stockton WWTP	S	\$33,038	861	\$51.75	\$51.88	1.884%	\$0.13	0.25%	0.005%		20.6%	Yes
17	MO-0022942	Bismark WWTP	UD	\$34,464	611	\$44.15	\$52.74	1.830%	\$8.59	19.46%	0.299%		25.2%	Yes
18	MO-0100200	Richmond South WWTF	S	\$39,813	3,378	\$59.99	\$60.09	1.811%	\$0.10	0.17%	0.003%		22.2%	Yes
19	MO-0093076	Pilot Grove East WWTF	UL	\$39,105	279	\$58.75	\$32.69	1.800%	\$0.00	0.000%	0.000%	*15	15.8%	Yes
20	MO-0026379	Odessa NW WWTP	S	\$51,571	2,978	\$77.24	\$77.31	1.799%	\$0.07	0.09%	0.002%		17.5%	Yes
21	MO-0129682	Luray WWTF	UL	\$35,855	47	\$30.00	\$52.91	1.771%	\$22.91	76.37%	0.767%		15.2%	Yes
22	MO-0109762	Marble Hill WWTF	UM	\$29,990	620	\$44.00	\$42.91	1.760%	\$0.00	0.00%	0.000%	*15	27.8%	Yes
23	MO-0052141	Delta WWTF	S	\$39,625	198	\$53.97	\$57.21	1.733%	\$3.24	6.00%	0.098%		5.9%	Yes
24	MO-0025739	Humansville WWTF	S	\$23,263	400	\$33.45	\$33.56	1.731%	\$0.11	0.33%	0.006%		41.6%	Yes
25	MO-0093505	City of Higbee	UL	\$36,495	215	\$35.86	\$52.48	1.726%	\$16.62	46.35%	0.546%		7.5%	Yes
26	MO-0041092	Shelbina WWTP	UD	\$33,955	788	\$44.27	\$48.59	1.717%	\$4.32	9.76%	0.153%		23.5%	Yes
27	MO-0050695	Wellsville East WWTF	UD	\$37,964	396	\$50.00	\$53.47	1.690%	\$3.47	6.94%	0.110%		13.7%	Yes
28	MO-0119121	PCPWSO No. 2, The Pines WWTF	UL	\$42,295	476	\$51.00	\$58.71	1.666%	\$7.71	15.12%	0.219%		20.6%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
29	MO-0125211	PCPWSO No. 2, Greenlefe Subdivision WWTF	UL	\$42,295	476	\$51.00	\$58.71	1.666%	\$7.71	15.12%	0.219%		20.6%	Yes
30	MO-0126730	PCPWSO No. 2, College Hills East WWTF	UD	\$42,295	476	\$51.00	\$58.71	1.666%	\$7.71	15.12%	0.219%		20.6%	Yes
31	MO-0129852	Moscow Mills Crooked Creek WWTF	S	\$39,850	1,238	\$54.20	\$54.50	1.641%	\$0.30	0.55%	0.009%		18.3%	Yes
32	MO-0055379	Monroe City WWTP	UD	\$36,495	1,161	\$45.00	\$49.60	1.631%	\$4.60	10.22%	0.151%		16.3%	Yes
33	MO-0103764	Bellflower Municipal WWTF	UL	\$27,964	161	\$28.63	\$37.68	1.617%	\$9.05	31.61%	0.388%		28.4%	Yes
34	MO-0094706	City of New Cambria WWTF	UL	\$30,499	81	\$20.00	\$40.88	1.608%	\$20.88	104.40%	0.822%	*18	26.8%	Yes
35	MO-0103756	Collins WWTF	UL	\$24,330	94	\$31.53	\$32.51	1.603%	\$0.98	3.11%	0.048%		41.2%	Yes
36	MO-0036382	JCPSD, Summer Set WWTF	S	\$36,429	425	\$48.41	\$48.60	1.601%	\$0.19	0.39%	0.006%		21.1%	Yes
37	MO-0023124	Louisiana WWTP	S	\$37,130	1,459	\$48.97	\$49.00	1.584%	\$0.03	0.06%	0.001%		12.2%	Yes
38	MO-0040851	Jonesburg WWTF	UM	\$37,456	306	\$45.10	\$48.32	1.548%	\$3.22	7.14%	0.103%		19.4%	Yes
39	MO-0054691	Elsberry WWTF	UM	\$38,416	847	\$42.35	\$49.31	1.540%	\$6.96	16.43%	0.217%		22.1%	Yes
40	MO-0084158	Montgomery City East WWTP	S	\$38,970	1,418	\$48.20	\$48.25	1.486%	\$0.05	0.10%	0.002%		23.7%	Yes
41	MO-0025216	Lexington WWTF	S	\$39,833	1,796	\$48.96	\$48.98	1.476%	\$0.02	0.04%	0.001%		13.5%	Yes
42	MO-0094919	Cuba WWTF	S	\$23,639	1,495	\$28.50	\$28.88	1.466%	\$0.38	1.33%	0.019%		34.6%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
43	MO-0104256	Leadwood Sewage Treatment Facility	S	\$30,610	475	\$36.54	\$36.72	1.440%	\$0.18	0.49%	0.007%		15.7%	Yes
44	MO-0056057	Mercer WWTF	UL	\$38,123	147	\$45.42	\$43.74	1.430%	\$0.00	0.00%	0.000%	*15	14.3%	Yes
45	MO-0100714	Winona WWTF	S	\$20,526	516	\$24.11	\$24.19	1.414%	\$0.08	0.33%	0.005%		37.4%	Yes
46	MO-0123579	Lone Jack WWTF		\$82,254	516	\$94.25	\$94.33	1.376%	\$0.08	0.08%	0.001%		5.4%	Yes
47	MO-0093513	Hannibal WWTP	S	\$36,616	7,549	\$41.10	\$41.14	1.348%	\$0.04	0.10%	0.001%		22.3%	Yes
48	MO-0031674	Conway WWTF	UM	\$32,173	299	\$23.69	\$36.10	1.346%	\$12.41	52.38%	0.463%		25.1%	Yes
49	MO-0092525	Verona WWTF	S	\$29,337	274	\$31.75	\$31.89	1.304%	\$0.14	0.44%	0.006%		59.0%	Yes
50	MO-0055158	Puxico WWTF	S	\$37,647	387	\$40.42	\$40.62	1.295%	\$0.20	0.49%	0.006%		20.2%	Yes
51	MO-0036242	Mexico WWTP	S	\$37,367	5,273	\$39.58	\$39.66	1.274%	\$0.08	0.20%	0.003%		19.4%	Yes
52	MO-0023019	Sedalia Central WWTF	UM	\$35,235	10,547	\$37.00	\$30.24	1.260%	\$0.00	0.00%	0.000%	*15	21.9%	Yes
53	MO-0023027	Sedalia North WWTF	UM	\$35,235	10,547	\$37.00	\$30.24	1.260%	\$0.00	0.00%	0.000%	*15	21.9%	Yes
54	MO-0101567	Sedalia Southeast WWTF	UM	\$35,235	10,547	\$37.00	\$30.24	1.260%	\$0.00	0.00%	0.000%	*15	21.9%	Yes
55	MO-0046931	Kimberling City WWTF	S	\$46,489	1,052	\$48.30	\$48.36	1.248%	\$0.06	0.12%	0.002%		9.8%	Yes
56	MO-0094579	Warrensburg East WWTP	S	\$39,633	7,993	\$40.82	\$40.85	1.237%	\$0.03	0.07%	0.001%		27.9%	Yes
57	MO-0088676	Winfield Municipal Lagoon	UM	\$53,622	494	\$44.60	\$54.83	1.227%	\$10.23	22.94%	0.229%		17.9%	Yes
58	MO-0022969	Skidmore WWTF	UM	\$32,013	140	\$20.00	\$32.59	1.222%	\$12.59	62.95%	0.472%		37.4%	Yes
59	MO-0056545	Homestead Village WWTF		\$39,696	65	\$40.00	\$40.36	1.220%	\$0.36	0.90%	0.011%		17.3%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
60	MO-0137111	Liberty WWTF	S	\$69,618	10,101	\$69.00	\$69.05	1.190%	\$0.05	0.07%	0.001%		7.3%	Yes
61	MO-0041165	Wellington WWTF	UL	\$48,983	335	\$25.00	\$47.81	1.171%	\$22.81	91.24%	0.559%		11.4%	Yes
62	MO-0120081	Charleston WWTP	S	\$24,605	1,543	\$23.75	\$23.93	1.167%	\$0.18	0.76%	0.009%		39.4%	Yes
63	MO-0055751	Viburnum Wastewater Lagoon	S	\$47,807	341	\$46.31	\$46.42	1.165%	\$0.11	0.24%	0.003%		23.8%	Yes
64	MO-0113751	Trimble WWTF	UM	\$54,697	285	\$31.00	\$52.66	1.155%	\$21.66	69.87%	0.475%		18.5%	Yes
65	MO-0046655	Hardin WWTF	UD	\$55,597	247	\$47.25	\$52.04	1.123%	\$4.79	10.14%	0.103%		13.7%	Yes
66	MO-0030805	Plattsburg WWTP	S	\$51,747	994	\$47.56	\$47.60	1.104%	\$0.04	0.08%	0.001%		14.0%	Yes
67	MO-0041467	PWSD Nol of Gasconade County WWTF	UL	\$33,517	177	\$12.28	\$30.73	1.100%	\$18.45	150.24%	0.661%	*18	22.2%	Yes
68	MO-0055425	Lake Lotawana WWTP #1	S	\$91,721	1,261	\$83.12	\$83.19	1.088%	\$0.07	0.08%	0.001%		3.9%	Yes
69	MO-0130371	Oak Grove WWTP	S	\$51,757	3,072	\$45.39	\$45.45	1.054%	\$0.06	0.13%	0.001%		7.9%	Yes
70	MO-0106844	Ashland Lagoon	UD	\$57,639	1,800	\$48.07	\$49.82	1.037%	\$1.75	3.64%	0.036%		9.0%	Yes
71	MO-0123803	Monticello WWTF	UL	\$70,595	65	\$37.50	\$60.49	1.028%	\$22.99	61.31%	0.391%		0.8%	Yes
72	MO-0114928	Anniston WWTF	S	\$34,787	96	\$28.00	\$29.52	1.018%	\$1.52	5.43%	0.052%		22.8%	Yes
73	MO-0039632	Clarksville WWTF	UL	\$45,051	211	\$88.27	\$37.37	0.995%	\$0.00	0.00%	0.000%	*17	15.5%	Yes
74	MO-0136611	Taos WWTF	S	\$79,731	404	\$65.22	\$65.30	0.983%	\$0.08	0.12%	0.001%		1.9%	Yes
75	MO-0023116	Higginsville North Lagoon	S	\$53,789	865	\$42.50	\$42.55	0.949%	\$0.05	0.12%	0.001%		22.1%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
76	MO-0136328	Cape Girardeau Municipal WWTF	S	\$43,106	16,547	\$33.55	\$33.57	0.935%	\$0.02	0.06%	0.001%		24.6%	Yes
77	MO-0054623	Troy Highway 47 WWTF	S	\$52,526	4,534	\$39.25	\$39.41	0.900%	\$0.16	0.41%	0.004%		11.7%	Yes
78	MO-0131296	Troy Southeast WWTF	S	\$52,526	4,534	\$39.25	\$39.41	0.900%	\$0.16	0.41%	0.004%		11.7%	Yes
79	MO-0039136	Carthage WWTP	S	\$36,290	5,451	\$27.14	\$27.18	0.899%	\$0.04	0.15%	0.001%		28.5%	Yes
80	MO-0023655	Drexel North WWTF	S	\$42,783	426	\$30.02	\$30.86	0.866%	\$0.84	2.80%	0.024%		10.7%	Yes
81	MO-0023663	Drexel South WWTF	S	\$42,783	426	\$30.02	\$30.86	0.866%	\$0.84	2.80%	0.024%		10.7%	Yes
82	MO-0100706	Bonne Terre NW WWTF	S	\$48,238	1,568	\$33.41	\$33.66	0.837%	\$0.25	0.75%	0.006%		10.8%	Yes
83	MO-0028711	Mountain Grove East WWTP	S	\$26,660	3,867	\$18.40	\$18.45	0.830%	\$0.05	0.27%	0.002%		26.3%	Yes
84	MO-0042111	Mountain Grove West WWTP	S	\$26,660	3,867	\$18.40	\$18.42	0.829%	\$0.02	0.11%	0.001%		26.3%	Yes
85	MO-0023205	Ash Grove WWTF	S	\$40,216	627	\$27.45	\$27.56	0.822%	\$0.11	0.40%	0.003%		21.8%	Yes
86	MO-0040843	Marshfield WWTF	S	\$37,724	2,971	\$25.00	\$25.06	0.797%	\$0.06	0.24%	0.002%		16.6%	Yes
87	MO-0058220	Village of Freeburg WWTF	UD	\$45,508	140	\$21.50	\$30.07	0.793%	\$8.57	39.86%	0.226%		10.0%	Yes
88	MO-0115118	Kelso WWTF	UL	\$52,795	275	\$33.78	\$27.10	0.767%	\$0.00	0.00%	0.000%	*15	10.6%	Yes
89	MO-0122432	PCRSD, Red Rock WWTF	S	\$72,057	4,526	\$44.97	\$45.11	0.751%	\$0.14	0.31%	0.002%		7.1%	Yes
90	MO-0136204	SCCPWSD #2 Hickory Trails WWTF	S	\$52,365	2,834	\$32.25	\$32.29	0.740%	\$0.04	0.12%	0.001%		13.6%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
91	MO-0133264	SCCPWSD, Providence Estates WWTF	S	\$52,365	2,834	\$32.25	\$32.29	0.740%	\$0.04	0.12%	0.001%		13.6%	Yes
92	MO-0108880	Stewartsville WWTF	S	\$48,091	410	\$29.55	\$29.65	0.740%	\$0.10	0.34%	0.002%		5.6%	Yes
93	MO-0139262	Grandview Amenities WWTF	S	\$53,881	1,045	\$33.08	\$33.10	0.737%	\$0.02	0.06%	0.000%		8.6%	Yes
94	MO-0134147	JCPSD, Mirasol WWTF	S	\$59,200	349	\$34.98	\$35.23	0.714%	\$0.25	0.71%	0.005%		10.9%	Yes
95	MO-0030791	Norborne Municipal WWTF	S	\$46,773	316	\$27.50	\$27.73	0.711%	\$0.23	0.84%	0.006%		17.7%	Yes
96	MO-0106399	Camdenton WWTP	S	\$34,019	1,635	\$19.90	\$19.93	0.703%	\$0.03	0.15%	0.001%		28.4%	Yes
97	MO-0137553	Brookfield WWTP	S	\$31,443	1,911	\$17.66	\$17.84	0.681%	\$0.18	1.02%	0.007%		28.8%	Yes
98	MO-0128490	NPSD, Interim Saline Creek Regional WWTF	S	\$89,777	11,847	\$47.58	\$47.60	0.636%	\$0.02	0.04%	0.000%		1.5%	Yes
99	MO-0122777	Festus Interim West WWTF	RC	\$46,280	7,939	\$24.33	\$24.35	0.631%	\$0.02	0.08%	0.001%		12.7%	Yes
100	MO-0103594	Scott City WWTF	S	\$40,300	1,922	\$19.10	\$19.55	0.582%	\$0.45	2.36%	0.013%		26.5%	Yes
101	MO-0139271	Palisades Point WWTF	S	\$70,338	1,045	\$33.08	\$33.10	0.565%	\$0.02	0.06%	0.000%		9.4%	Yes
102	MO-0139246	The Charleston WWTF	S	\$70,338	1,045	\$33.08	\$33.10	0.565%	\$0.02	0.06%	0.000%		9.4%	Yes
103	MO-0106151	Fremont Hills WWTP	S	\$109,556	522	\$48.77	\$48.84	0.535%	\$0.07	0.14%	0.001%		0.7%	Yes
104	MO-0107883	Kearney WWTF	S	\$74,366	3,518	\$32.36	\$32.51	0.525%	\$0.15	0.46%	0.002%		4.1%	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
105	MO-0131300	DCSD, Wyndgate Subdivision WWTP	S	\$86,646	931	\$21.75	\$21.84	0.302%	\$0.09	0.41%	0.001%		4.3%	Yes
106	MO-0130591	Sunny Slope Country Club Sewer District WWTF	S	\$51,729	286	*10	*10	0.003%	\$0.00	*10	*10	*10	*10	Yes
107	MO-0135569	Stoddard County Common Sewer District No. 1	S	\$41,055	369	*10	*10	0.003%	\$0.00	*10	*10	*10	*10	Yes
108	MO-0099228	LCPWSD No. 1 - Green Acres WWTF	RC	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
109	MO-0121886	LCPWSD No. 1 WWTF	RC	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
110	MO-0127698	LCPWSD No. 1 - White Fences Subdivision WWTF	RC	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
111	MO-0132152	DCSD, Riverdale Subdivision WWTF	S	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
112	MO-0113247	TCRSD, Big Bear Resort No. 2 WWTF	S	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
113	MO-0119474	PCRSD, Brush Creek Facility	S	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
114	MO-0126985	Clearwater Condominiums WWTF	S	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

No. *4	Permit No.	Facility Name *5	Pollution Control Option *6	Annual MHI *7	Number of Service Users	Current Monthly Sewer Rate Per User	Projected Monthly Sewer Rate Per User		Increase of Monthly Sewer Rate Per User				House- holds At Or Below Poverty *7	Affordability *8
						\$	\$	% of Monthly MHI *7	\$	%	% of Monthly MHI *7			
	*9			[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]			
115	MO-0105597	JCPSD, Secluded Forest WWTF	S	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
116	MO-0105970	JCPSD, Wedgewood Village WWTF	S	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	Yes
117	MO-0138657	Clyde Hamrick Elementary School	S	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	Yes
118	MO-0097659	Central Missouri Correctional Facility WWTF	S	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	Yes

Table 1. Key Data Utilized or Generated in the Affordability Findings Issued During 2019 (Cont.)

<u>Notes</u>	
*1	Average increase of monthly sewer rate per User = “sum of increase of monthly sewer rate per User” / “107 available data points”
*2	Average increase of monthly sewer rate as a % = “sum of increase of monthly sewer rate as a %” / “105 available data points”
*3	Average increase of monthly sewer rate as a % of monthly MHI = “sum of increase of monthly sewer rate as a % of monthly MHI” / “105 available data points”
*4	This table is arranged in descending order of projected monthly sewer rate per User as a percentage of monthly MHI of the respective community.
*5	<p>Abbreviations used in the facility names include the following:</p> <p>DCSD: Duckett Creek Sanitary District</p> <p>JCPSD: Jefferson County Public Sewer District</p> <p>LCPWSD: Lincoln County Public Water Supply District</p> <p>NPSD: Northeast Public Sewer District</p> <p>PCPWSD: Phelps County Public Water Supply District</p> <p>PCRSD: Platte County Regional Sewer District</p> <p>PWSD: Public Water Supply District</p> <p>SCCPWSD: St. Charles County Public Water Sewer District</p> <p>TCRSD: Taney County Regional Sewer District</p> <p>WWTF: Wastewater Treatment Facility</p> <p>WWTP: Wastewater Treatment Plant</p>
*6	<p>Abbreviations used in the pollution control options include the following:</p> <p>S: sampling only</p> <p>UC: upgrade (collection system)</p> <p>UD: upgrade (disinfection only)</p> <p>UL: upgrade (land application)</p> <p>UM: upgrade (mechanical plant)</p> <p>RC: regionalization and consolidation</p>
*7	MHI: annual median household income
*8	Yes: affordable; No: not affordable; Mandate: federal mandate regardless of affordability.

Notes (cont.)

- *9 $[E]=[D/(A/12)]*100$
 $[F]=[D]-[C]$
 $[G]=[F/C]*100$
 $[H]=[F/(A/12)]*100$
- *10 Data not available as the permittees did not provide their current User rates, although the Department had made attempts to obtain the information.
- *11 Analyses included in Abatement Order on Consent documents.
- *12 Not applicable, as different sewer districts use specific rate structures and they are generally considered as sufficient to comply with the permits.
- *13 Not applicable, as schools, churches, nursing homes, airports, ports, training centers, correctional centers, and other institutional facilities do not finance the upgrade, operation, or maintenance of their wastewater treatment facilities based on residential sewer rates.
- *14 Not applicable, as federal-owned, state-owned, and local government-owned systems do not finance the upgrade, operation, or maintenance of their wastewater treatment facilities based on residential sewer rates.
- *15 The projected User rates were lower than the current sewer rates, therefore the current sewer rates were used to assess residential impacts, as it is unlikely the User rates would decrease after upgrading the facilities.
- *16 Projected Monthly User Rate as a percentage of the monthly MHI exceeds 2%. An affordability threshold for Projected Monthly User Rate as a percentage of the monthly MHI varies depending on the situation of each individual community. The cost analyses associated with these permits have resulted in findings that the Projected Monthly User Rates will likely be affordable. If additional information is provided in the future that indicate the Projected Monthly User Rates are unaffordable, the Department will modify the analyses and permits accordingly and grant extensions to schedules of compliance to mitigate the impacts on the residents.
- Greenfield Talburt WWTF (MO-0055603, No. 1 in Table 1)*
 See page 1 for this permit action summary.
- Greenfield Sharpe WWTF (MO-0055590, No. 2 in Table 1)*
 See page 1 for this permit action summary.
- Hamilton Northeast WWTF (MO-0022080, No. 6 in Table 1)*
 See page 2 for permit action summary.
- Hamilton Southeast WWTF (MO-0022071, No. 7 in Table 1)*
 See page 2 for permit action summary.
- Hamilton Southwest Municipal WWTF (MO-0022063, No. 8 in Table 1)*
 See page 2 for permit action summary.
- Miller WWTF (MO-0041149, No. 9 in Table 1)*
 See page 2 for permit action summary.
- Urbana WWTF (MO-0095176, No. 10 in Table 1)*
 See page 2 for permit action summary.

Notes (cont.)

- *17 Facilities with a projected decrease in Monthly Sewer Rate per User while the current Monthly Sewer Rate per User exceeds 2% of the community's monthly MHI. Since it is unlikely a Monthly Sewer Rate will decrease, in these cases, the Department is working with permittees to secure grants and low-interest loans wherever possible.

Weaubleau WWTF (MO-0040860, No. 3 in Table 1)

Actions in the City of Weaubleau's permit require compliance with effluent limitations for Ammonia. The city is currently charging \$57.20 per User per month (per 5,000 gallons) which equates to 3.228% of the community's monthly MHI. Following completion of the affordability analysis, land application was determined to be the most practical and affordable option to meet new permit requirements. The affordability findings projected a monthly sewer rate of \$55.80, which would be a \$1.40 decrease. The Department established a 30-year schedule of compliance to assist the city with meeting the new permit requirements.

Clarksville WWTF (MO-000039632, No. 73 in Table 1)

Permit actions for the City of Clarksville require compliance with effluent limitations for Ammonia and nutrient monitoring requirements. Additionally, final limits were included for chloride, for which no known technology is available to remove from wastewater; therefore, associated costs are unknown. Cost assumptions in the analysis are for complete replacement of the existing treatment facility, as well as conversion of the facility into a no-discharge land application system. The analysis determined land application to be the most practical and affordable option. The current sewer rate is \$88.27 (per 5,000 gallons), which is 2.35% of the community's monthly MHI. The affordability finding projected a monthly User rate of \$37.27 for land application, which equates to 0.995% of monthly MHI; thus, a reduction of 1.36% of MHI. Based on these findings, the Department established an 8-year schedule of compliance in the permit and will reevaluate it at the next permit renewal in 2023.

- *18 Facilities with a projected 100% or greater increase in Monthly Sewer Rate per User. In all cases, the Department is working with the permittees to secure grants and low-interest loans wherever possible.

Village of Benton City Sewer System (MO-0103021, No. 12 in Table 1)

See page 2 for this permit action summary.

PWSD No. 1 of Gasconade County WWTF (MO-0041467, No. 67 in Table 1)

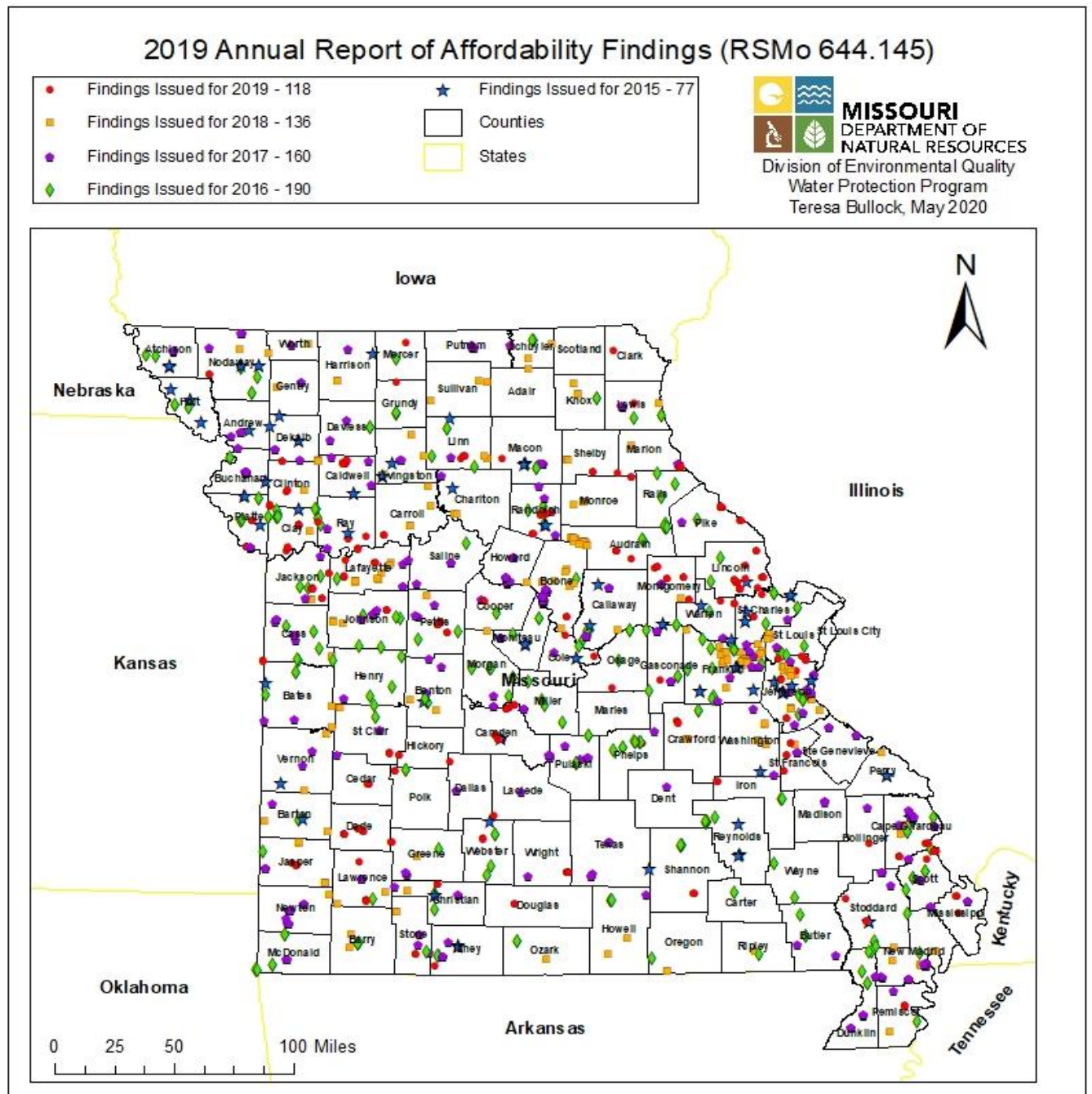
See page 2 for this permit action summary

City of New Cambria WWTF (MO-0094706, No. 34 in Table 1)

See page 3 for this permit action summary.

2. Geographical Distribution: 2015-2019

The locations of the wastewater treatment facilities for which the Department conducted affordability findings during calendar years 2015 through 2019 respectively are illustrated in Map 1 below.



Although the data in this data set have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the Department as to the accuracy of this data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the Department in the use of these data or related materials.

Map 1. Locations of the Wastewater Treatment Facilities with Affordability Findings Issued in 2015 through 2019

3. Conclusion

Based on the information and data collected, derived and examined, all the new requirements for discharges incorporated into permits for publicly owned sewer systems or water or sewer treatment works, and all actions enforcing provisions of Chapter 644 RSMo or the Federal Water Pollution Control Act by the Missouri Department of Natural Resources during calendar year 2019 met the affordability criteria.

This report was prepared by the Operating Permits Section of the Water Protection Program, Missouri Department of Natural Resources.

Appendix A. Subsections 644.145.4 and 644.145.9 of the Revised Statutes of Missouri

Revised Statutes of Missouri Chapter 644 Water Pollution

644.145.4. The department of natural resources shall adopt procedures by which it will make affordability findings that evaluate the affordability of permit requirements and enforcement actions described in subsection 1 of this section, and may begin implementing such procedures prior to promulgating implementing regulations. The commission shall have the authority to promulgate rules to implement this section pursuant to chapters 536 and 644, and shall promulgate such rules as soon as practicable. Affordability findings shall be based upon reasonably verifiable data and shall include an assessment of affordability with respect to persons or entities affected. The Department shall offer the permittee an opportunity to review a draft affordability finding, and the permittee may suggest changes and provide additional supporting information, subject to subsection 6 of this section. The finding shall be based upon the following criteria:

- (1) A community's financial capability and ability to raise or secure necessary funding;
- (2) Affordability of pollution control options for the individuals or households at or below the median household income level of the community;
- (3) An evaluation of the overall costs and environmental benefits of the control technologies;
- (4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates;
- (5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low- and fixed-income populations. This requirement includes but is not limited to:
 - (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations; and
 - (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained;

- (6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;
- (7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards; and
- (8) An assessment of any other relevant local community economic condition.

644.145.9. The department shall file an annual report by the beginning of the fiscal year with the governor, the speaker of the house of representatives, the president pro tempore of the senate, and the chairs of the committees in both houses having primary jurisdiction over natural resource issues showing at least the following information on the findings of affordability completed in the previous calendar year:

- (1) The total number of findings of affordability issued by the Department, those categorized as affordable, those categorized as not meeting the definition of affordable, and those implemented as a federal mandate regardless of affordability;
- (2) The average increase in sewer rates both in dollars and percentage for all findings found to be affordable;
- (3) The average increase in sewer rates as a percentage of median house income in the communities for those findings determined to be affordable and a separate calculation of average increases in sewer rates for those found not to meet the definition of affordable;
- (4) A list of all the permit holders receiving findings, and for each permittee the following data taken from the finding of affordability shall be listed:
 - (a) Current and projected monthly residential sewer rates in dollars;
 - (b) Projected monthly residential sewer rates as a percentage of median household income;
 - (c) Percentage of households at or below the state poverty rate.

Appendix B. Overall Procedure for Making Affordability Findings

The Department conducts an affordability finding, or a Cost Analysis for Compliance (CAFCom), as part of the renewal process for a National Pollutant Discharge and Elimination System (NPDES) permit, utilizing the following four primary tools and data sources:

- (1) A Financial Questionnaire with a Community Supplemental Survey sent to permit holders categorized as a Publicly Owned Treatment Works (POTW) for collecting information on the sustainability and financial capability of the community; examples of information requested are the "current monthly residential sewer rates," and a primary socioeconomic indicator (Table 1), and "property tax collection rate in the municipality," a secondary socioeconomic indicator;
- (2) The Affordability Prescreening Tool developed by the Department for compiling and analyzing socioeconomic data available from national, regional and local databases, including statistics

from the U.S. Census Bureau; an example of data being “monthly median household income” (Table 1) and “percentage of households at or below poverty” (Table 1);

- (3) A CAPDEWORKS Model developed by Hydromantis Environmental Software Solutions, Inc. for estimating the capital costs and operating and maintenance costs for different wastewater treatment technologies for compliance of upgrades so as to calculate the “projected monthly residential sewer rate” (Table 1);
- (4) The Missouri Rural Population Sustainability Assessment Tool developed by the Environmental Finance Center at Wichita State University for assessing the potential of growth and sustainability of each rural community.

Once the draft NPDES permit is completed, the permit holder is given the opportunity to review and comment on the draft permit and the CAFCom during the 10-day preview and 30-day public notice period. These review and comment periods offer permit holders an opportunity to provide additional information in regard to their community’s unique financial situations before the final NPDES permit is issued. When the NPDES permit contains a Schedule of Compliance, during the 10-day preview, Department staff contact the permit holder via phone calls to ensure the permit holder has received and understood the draft permit and the CAFCom.